

Appl. No: 09/782,532
Amdt. Dated August 3, 2004
Reply to Office Action of May 17, 2004

Amendments to the Specification:

Please replace the paragraph which begins at line 20, page 20 with the following amended paragraph:

FIG. 4 shows a conceptual diagram of the relationship between the distributed storage management processes in accordance with the present invention. SAM processes ~~[[406]] 402~~ represent a collection of distributed instances of SAM processes 106 referenced in FIG. 1. Similarly, RAIN ~~[[405]] 403~~ in FIG. 5 represents a collection of instances of RAIN nodes 105 referenced in FIG. 1. It should be understood that RAIN instances ~~[[405]] 403~~ and SAM instances ~~[[406]] 402~~ are preferably distributed processes. In other words, the physical machines that implement these processes may comprise tens, hundreds, or thousands of machines that communicate with each other directly or via network(s) 101 to perform storage tasks.

Please replace the paragraph which begins at line 1, page 21 with the following amended paragraph:

A collection of RAIN storage element ~~405~~ provide elements 403 provides basic persistent data storage functions by accepting read/write commands from external sources. Additionally, RAIN storage elements ~~[[405]] 403~~ communicate with each other to exchange state information that describes, for example, the particular context of each RAIN element 215 and/or RAIN node 105 within the collection ~~[[405]] 403~~.

Please replace the paragraph which begins at line 8, page 21 with the following amended paragraph:

A collection of SAM processes ~~406~~ provide 402 provides basic storage management functions using the collection of RAIN storage nodes ~~[[405]] 403~~. The collection of SAM processes ~~[[406]] 402~~ ~~[[are]]~~ is implemented in a distributed fashion across multiple nodes 105/106. SAM processes ~~[[406]] 402~~ receive storage access requests, and generate corresponding read/write commands to instances (i.e., members) of the RAIN node collection ~~[[405]] 403~~.

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SAM processes 402 are, in particular implementations, akin to RAID processes in that they select particular RAIN elements 215 to provide a desired level of availability/reliability using parity storage schemes. The SAM processes 402 are coupled to receive storage tasks from clients 401. Storage tasks may involve storage allocation, deallocation, migration, as well as read/write/parity operations. Storage tasks may associated with a specification of desired reliability rates, recovery rates, and the like.

Please replace the paragraph which begins at line 25, page 21 with the following amended paragraph:

FIG. 5 shows an exemplary storage system in accordance with the present invention from another perspective. Client 401 represents any of a number of network appliances that may use the storage system in accordance with the present invention. Client 401 uses a file system or other means for generating storage requests directed to one of accessible storage nodes 215. Not all storage nodes 215 need to be accessible through Internet 101. In one implementation, client 401 makes a storage request to a domain name using HyperText Transport Protocol (HTTP), Secure HyperText Transport Protocol (HTTPS), File Transfer Protocol (FTP), or the like. The Internet Domain Name System (DNS) will resolve the storage request to a particular IP address identifying a specific storage node 215 that implements the SAM processes 402. Client 401 then directs the actual storage request using a mutual protocol to the identified IP address.